



VA 13 CARBONATOR

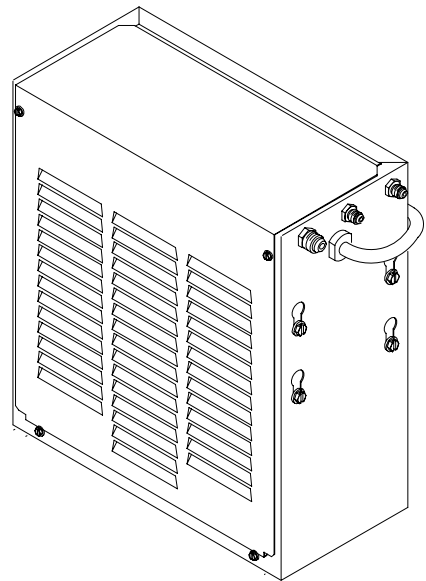
Service Manual

IMPORTANT:

It is the responsibility of the Service Person to ensure that the water supply to the dispensing equipment is provided with protection against backflow by an air gap as defined in ANSI/ASME A112. 1.2-1979; or an approved vacuum breaker or other such method as proved effective by test.

Water pipe connections and fixtures directly connected to a potable water supply shall be sized, installed, and maintained according to Federal, State, and Local laws.

When installing in an area regulated by the City of Los Angeles Plumbing and/or Mechanical Codes, a City of Los Angeles approved reduced pressure principle backflow preventer shall be installed on each potable water supply to each carbonator.



Manual Part No. 318511005

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SAFETY INFORMATION

Recognize Safety Information

This is the safety-alert symbol. When you see this symbol on our machine or in this manual, be alert to the possibility of personal injury.

Follow recommended precautions and safe operating practices.



Understand Signal Words

A signal word - **DANGER**, **WARNING**, OR **CAUTION** is used with the safety-alert symbol. **DANGER** identifies the most serious hazards.

Safety signs with signal word **DANGER** or **WARNING** are typically near specific hazards.

General precautions are listed on **CAUTION** safety signs. **CAUTION** also calls attention to safety messages in this manual.



Follow Safety Instructions

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Learn how to operate the machine and how to use the controls properly. Do not let anyone operate the machine without instructions. Keep your machine in proper working condition. Unauthorized modifications to the machine may impair function and/or safety and affect the machine life.

CO₂ (Carbon Dioxide) Warning

CO₂ Displaces Oxygen. Strict Attention *must* be observed in the prevention of CO₂ (carbon dioxide) gas leaks in the entire CO₂ and soft drink system. If a CO₂ gas leak is suspected, particularly in a small area, *immediately* ventilate the contaminated area before attempting to repair the leak. Personnel exposed to high concentration of CO₂ gas will experience tremors which are followed rapidly by loss of consciousness and suffocation.

Shipping, Storing, Or Relocating Unit

CAUTION: All water must be purged from the Unit if exposed to freezing temperature. A freezing ambient temperature will cause residual water remaining inside the Unit to freeze resulting in damage to internal components of the Unit.

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GENERAL INFORMATION

TO THE USER OF THIS MANUAL

This Manual is a guide for servicing and maintaining this equipment. Refer to Table Of Contents for page location of detailed information pertaining to questions that may arise. A parts manual (P/N 318511005) for this equipment is available upon request.

This Unit must be serviced by a qualified Service Person. This Unit contains no User serviceable parts.

CLAIMS INSTRUCTIONS

Claims: In the event of shortage, notify the carrier as well as IMI Cornelius immediately. In the event of damage, notify the carrier. **IMI Cornelius is not responsible for damage occurring in transit, but will gladly render assistance necessary to pursue your claim. Merchandise must be inspected for concealed damage within 15 days of receipt.**

WARRANTY REFERENCE INFORMATION

Warranty Registration Date (to be filled out by customer)
Unit Part Number:
Serial Number:
Install Date:
Local Authorized Service Center:

DESIGN DATA

Table 1. Design Data	
Model Numbers	
115 VAC Unit (With liquid dual check valve)	416411000
115 VAC Unit (With vented dual check valve)	1621
230 VAC Unit (With liquid dual check valve)	496411000
230 VAC Unit (With liquid dual check valve)	496411020
230 VAC Unit (With liquid dual check valve)	496411040
Overall Dimensions:	
Width	6-3/8 inches
Height	15 inches
Depth	14 inches
Weight:	
Dry	28-3/4 pounds
Shipping	30-1/4 pounds
Ambient Operating Temperature	
40° F to 100° F	

Table 1. Design Data (cont'd)	
Maximum Operating CO ₂ Pressure	125 PSI
Electrical Requirements:	
Operating Voltage and Current Draw	See Unit Nameplate

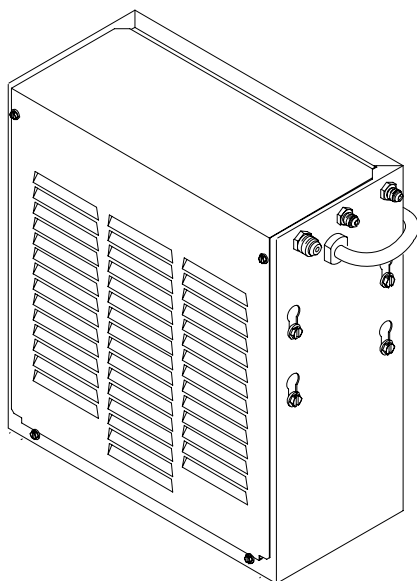


FIGURE 1. VA 13 CARBONATOR

UNIT DESCRIPTION

The carbonator is a compact Unit that may be installed in a remote location from where its carbonated water outlet is to be connected to a post-mix dispenser or a system. The purpose of the Unit is to mix plain water and carbon dioxide (CO₂) gas which results in and provides carbonated water for a post-mix dispenser or a system. The Unit consists basically of a water pump, motor, and a carbonated water tank. The water pump has a liquid dual check valve (Unit Model No. 416411000, 496411000, 496411020, and 496411040 or a Vented Dual Check Valve (Unit Model No. 1621) on its outlet to prevent carbonated water from back flowing into the city water system. The Vented Dual Check Valve vents water and possibly CO₂ gas out of a vent port on failure of the primary check valves. Should such venting occur, the primary check valve should be replaced. The Unit CO₂ inlet has a single check valve to prevent carbonated water back flow into the CO₂ regulator.

THEORY OF OPERATION

A CO₂ cylinder delivers carbon dioxide (CO₂) gas through an adjustable CO₂ regulator to the carbonated water tank. At the same time, plain water is pumped into the carbonated water tank by the water pump and is carbonated by CO₂ gas also entering the tank. Carbonated water enters the tank until the weight of the water in the tank forces the tank and balance control mechanism down to activate the level control switches. Activating the level control switches disrupts electrical power to and stops the water pump motor. As carbonated water is dispensed from the tank, the tank becomes lighter allowing the tank and balance control mechanism to rise which again activates the level control switches. Activating the level control switches restores electrical power to the water pump motor allowing the carbonated water tank to be replenished.

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SERVICE AND MAINTENANCE

This section describes service and maintenance procedures to be performed on the Unit.

IMPORTANT: Only qualified personnel should service internal components or electrical wiring.



CAUTION: This Unit must not be installed in an unsheltered outdoor location where it will be exposed to the elements.



WARNING: Disconnect electrical power to the carbonator to prevent personal injury before attempting any internal maintenance.



CAUTION: Never operate the carbonator with the water inlet supply line shutoff valve closed. "Dry running" the water pump will burn out the pump. A pump damaged in this manner is not covered by warranty.



CAUTION: To prevent a fire hazard, no object should be placed or stored on top of the Unit.

PREPARING UNIT FOR SHIPPING OR RELOCATING



CAUTION: Before shipping, storing, or relocating the carbonator, all water must be purged from inside the carbonator. A freezing ambient environment will cause residual water remaining inside the carbonator to freeze resulting in damage to its internal components. Damage of this type will void the Factory warranty.

Perform the following procedure to purge water from inside the carbonator.

1. Disconnect electrical power from the Unit.
2. Close the plain water inlet line shutoff valve.
3. Disconnect plain water inlet line from the Unit.
4. Dispense from the Post-Mix Dispenser dispensing valve until all carbonated water has been dispensed from the carbonated water tank.
5. Shut off CO₂ supply to the Unit, then disconnect CO₂ inlet supply line from the Unit.
6. Connect filtered dry compressed air (50-psi max) to the Unit water inlet. *DO NOT USE CO₂ GAS WHICH COULD CAUSE A HEALTH HAZARD.*
7. Dispense from Post-Mix Dispenser dispensing valve until all residual water has been blown from Unit and lines.
8. Disconnect filtered dry compressed air from Unit water inlet.

9. Disconnect carbonated water outlet line from the Unit.
10. The Unit is now ready for shipping or relocating.

PERIODIC CLEANING

Clean all external surfaces of the Unit with a sponge. Rinse out the sponge with clean water, then wring excess water out of the sponge and wipe off external surfaces of the Unit. Wipe the Unit dry with a clean soft cloth. *DO NOT USE ABRASIVE CLEANERS.*

LUBRICATION

The water pump motor bearings must be oiled periodically. Refer to oiling instructions on the pump motor. *DO NOT OVER OIL.*

ADJUSTMENTS

ADJUSTING CARBONATOR CO₂ REGULATOR

To readjust the CO₂ regulator to a lower setting, loosen adjusting screw lock nut, then turn the adjusting screw to the left (counterclockwise) until pressure gage reads 5-psi lower than new setting will be. Turn the adjusting screw to the right (clockwise) until the gage registers a new setting, then tighten the lock nut. Adjust the carbonator CO₂ regulator to a nominal 80-psi.

ADJUSTING CARBONATOR TANK LIQUID LEVELS

(see Figures 2 and 3)



WARNING: To avoid possible electrical shock which may cause serious injury or death, make sure electrical power is disconnected from the Unit before attempting to adjust the level control switches.

The carbonator water tank liquid levels (pump cut-in and cut-out) were adjusted at the factory and should require no further adjustments. If an incorrect adjustment is suspected, check and make necessary adjustments as follows:

1. Remove screws securing cover assembly on the Unit, then remove the cover.
2. With carbonated water tank full of water and water pump motor cycled off, disconnect electrical power from the Unit.
3. Using container graduated in ounces, open dispensing valve and completely drain the carbonated water tank. Total carbonated water dispensed should be 40 to 60-ounces.

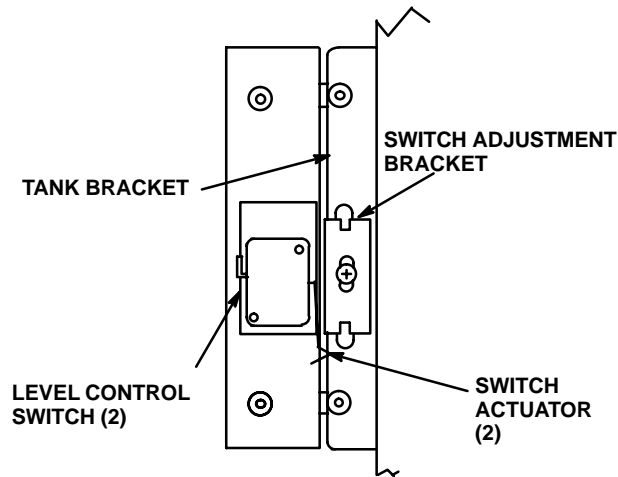


FIGURE 2. LEVEL CONTROL SWITCHES

4. Under 40-ounces of carbonated water dispensed.

If total amount of carbonated water dispensed is under 40-ounces, loosen screw securing the switch adjustment bracket and move the bracket up slightly. Moving the bracket up allows weight of more water in the tank to push the tank further down before activating the level control switches which shuts off the water pump. Tighten screw after adjustment.

Over 60-ounces of carbonated water dispensed.

If total measurement of carbonated water dispensed is over 60-ounces, loosen screw securing the switch adjustment bracket and move the bracket down slightly. Moving the bracket down allows weight of less water in the tank to activate the level control switches which shuts off the water pump motor. Tighten screw after adjustment.

5. Connect electrical power to the Unit and allow the carbonated water tank to fill with water. After water pump motor cycles off, disconnect electrical power from the Unit.
6. Repeat steps 3, 4, and 5 preceding until correct switch adjustment is achieved.
7. Connect electrical power to the Unit and allow the carbonated water tank to fill with water.
8. Using container graduated in ounces, open Post-Mix Dispenser dispensing valve and dispense until the water pump motor cycles on, then immediately close the dispensing valve. Total volume dispensed (differential) should be 8 to 20-ounces.
9. Install cover assembly on the Unit and secure with screws.

WATER PUMP YEARLY MAINTENANCE (OR AFTER WATER SYSTEM DISRUPTIONS)



WARNING: The carbonator water pump water inlet strainer screen and liquid dual check valve (Unit Model No. 416411000, 496411000, 496411020, and 496411040 *must* be inspected and serviced at least once a year under normal circumstances, and after any disruptions (plumbing work, earthquake, etc.) to the water supply system that might cause turbulent (erratic) flow of water through the system. If the system has a Vented Dual-Check Valve (Unit Model No. 1621), clean the carbonator water pump water inlet strainer screen and flush the system. A carbonator water pump with no screen or a defective screen in the strainer would allow foreign particles to foul the liquid dual check valve. CO₂ gas could then back flow into the water system and create a health hazard in the water system.

SERVICING WATER PUMP WATER INLET STRAINER SCREEN

(see Figures 3 and 4)

1. Disconnect electrical power from the Unit.
2. Close plain water inlet line shutoff valve.
3. Note pressure setting on the carbonator CO₂ regulator, then loosen CO₂ regulator adjusting screw lock nut and turn the screw to the left (counterclockwise) until the regulator gage reads 0-psi.
4. Remove screws securing cover assembly on the Unit, then remove the cover.
5. Pull up on the carbonated water tank relief valve to release CO₂ pressure from inside the tank.
6. Loosen screen retainer, then pull the screen retainer and strainer screen from the water pump.
7. Pull strainer screen from the screen retainer. Clean any sediment from the screen retainer and water pump screen retainer port.
8. Inspect the strainer screen for holes, restrictions, corrosion and other damage. Discard the damaged strainer screen.
9. Check O-Ring on the screen retainer. Replace worn or damaged O-Ring (P/N 315349000).

Note: A strainer screen should always be used, otherwise particles could foul the double-liquid check valve.

10. Install good or new strainer screen (P/N 315348000) in the screen retainer, then screw the retainer into the water pump and tighten securely.
11. Service the liquid dual check valve (refer to next paragraph, **SERVICING LIQUID DUAL CHECK VALVE**).

SERVICING LIQUID DUAL CHECK VALVE

(see Figures 4 and 5)

1. Refer to steps 1 through 5 in **SERVICING WATER PUMP WATER INLET STRAINER SCREEN** to prepare the carbonator for servicing its liquid dual check valve.
2. Loosen screw on the pump-to-motor coupling, then turn the water pump for access to the liquid dual check valve assembly.
3. Disconnect water tank inlet line from the liquid dual check valve assembly outlet. Remove the check valve assembly from elbow fitting in the water pump outlet port.
4. Disassemble each check valve as shown in Figure 5.
5. Wipe each part with clean lint-free cloth. Inspect each part, especially the ball for burrs, nicks, corrosion, deterioration, and other damage. Discard the ball seat and any damaged or suspicious parts and replace with new parts during reassembly.
6. Reassemble the check valves as shown in Figure 5. ALWAYS INSTALL NEW BALL SEAT (O-RING) item 2 and FLAT WASHER (item 1).

NOTE: Make sure when assembling the check valves together, the FLAT WASHER (item 1) is in place inside female end of the check valve.

7. Assemble check valves together. *DO NOT OVER TIGHTEN.*
8. Install the liquid dual check valve assembly on elbow fitting in the water pump outlet port.

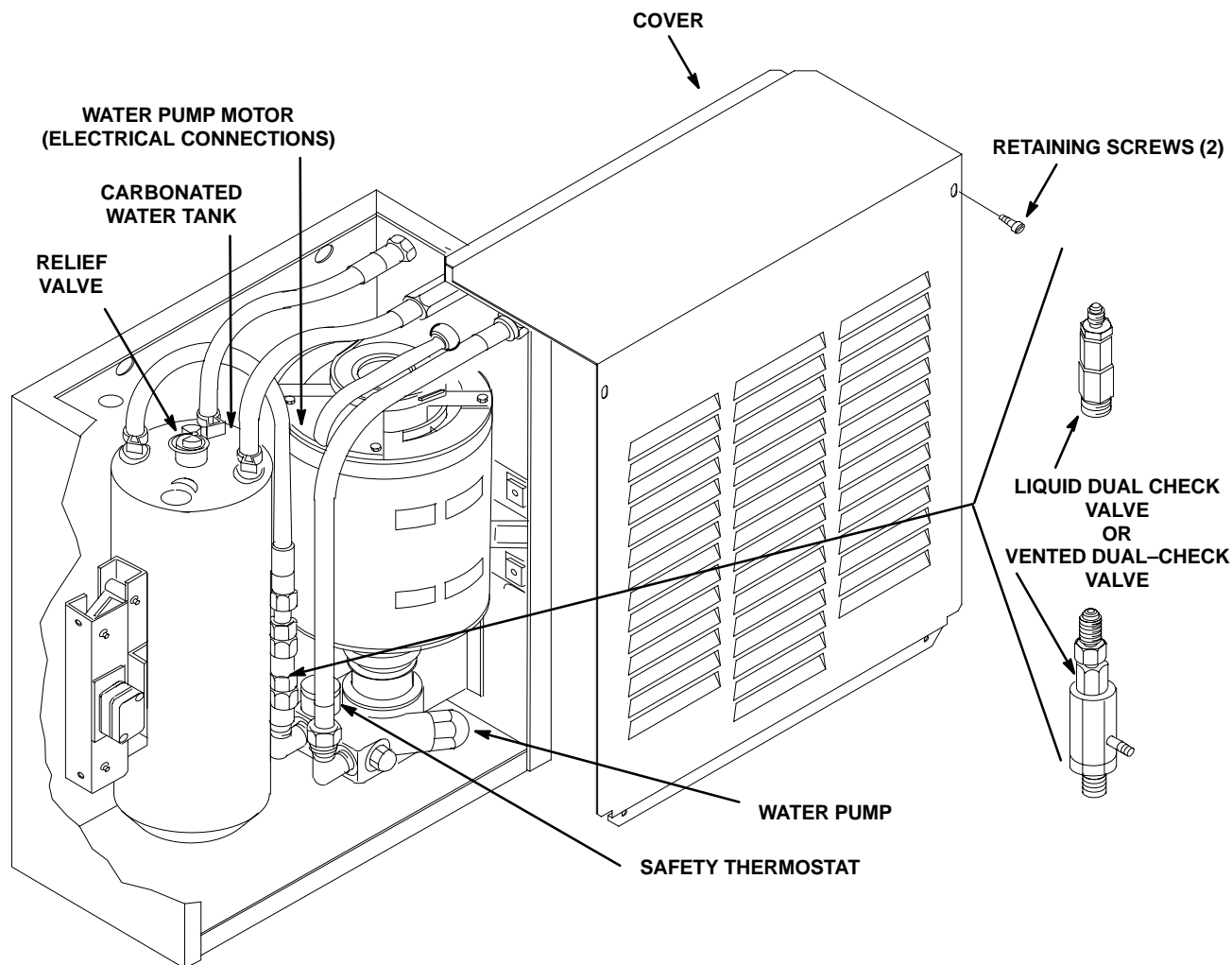


FIGURE 3. CARBONATOR ASSEMBLY COMPONENTS

9. Connect water tank inlet line to the liquid dual check valve assembly outlet. *DO NOT TIGHTEN*).
10. Turn the water pump back into operating position, then tighten screw on the pump-to-motor coupling
11. Turn the carbonator CO₂ regulator adjusting screw to the right (clockwise) until gage indicates pressure setting noted in step 3 of **SERVICING WATER PUMP WATER STRAINER SCREEN**. Tighten adjusting screw lock nut.
12. Open shutoff valve in the Unit plain water inlet line.
13. Connect electrical power to the Unit. The water pump will cycle on and fill the carbonated water tank. Check for leaks and tighten any loose connections.
14. Pull up on the carbonated water tank relief valve to release trapped air from inside the tank.

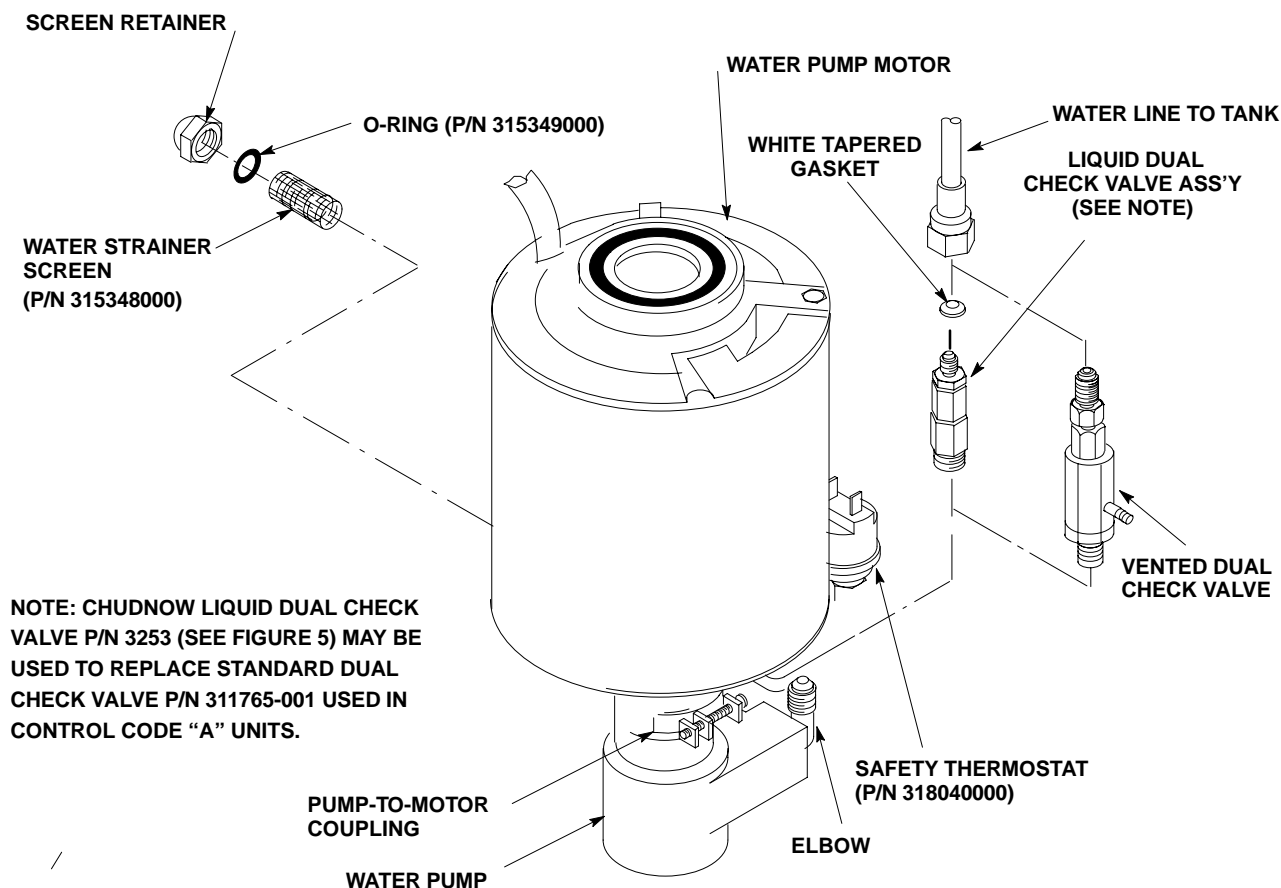
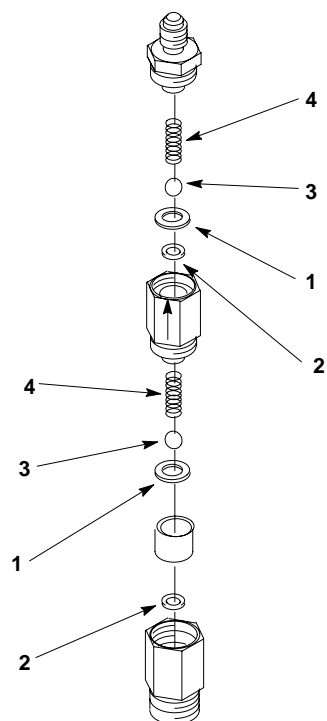


FIGURE 4. WATER STRAINER SCREEN AND LIQUID DUAL CHECK VALVE



NOTE: USED IN CONTROL CODE "A" UNITS.

INDEX NO.	PART NO.	NAME
	311765001	STANDARD DUAL CHECK VALVE ASS'Y (SEE NOTE)
1	*560000480	FLAT WASHER
2	*560000432	BALL SEAT (O- RING)
3	312419	BALL
4	560000 481	SPRING

* INSTALL NEW BALL SEAT (ITEM 2) AND FLAT WASHER (ITEM 1) AT EACH SERVICING.

NOTE: USED IN CONTROL CODE "B" UNITS.

INDEX NO.	PART NO.	NAME
	3253	CHUDNOW DUAL CHECK VALVE ASS'Y (SEE NOTE)
1	*560000480	FLAT WASHER
3	312419	BALL
2	*560000432	BALL SEAT (O- RING)
4	560000 481	SPRING

* INSTALL NEW BALL SEAT (ITEM 2) AND FLAT WASHER (ITEM 1) AT EACH SERVICING.

FIGURE 5. CHECK VALVE ASSEMBLY

15. Install cover assembly on the Unit and secure with screws.

THE VENTED DUAL-CHECK VALVE ASSEMBLY

A vented dual-check valve assembly is installed in the carbonator between the water pump outlet and the water inlet to the carbonated water tank as shown in Figure 3. The vented dual-check valve assembly vents carbonated water, and possibly CO₂ gas out of a vent port upon failure of the primary check valves. *Should such venting occur, the vented dual-check valve assembly must be replaced.*

REPAIR AND REPLACEMENT

LEVEL CONTROL SWITCH(S)

(see Figure 2)

NOTE: If level control switch(s) are determined to be at fault, it will be necessary to test each switch individually for proper operation and replace switch(s) as necessary.

Removal.

1. Disconnect electrical power from the Unit.
2. Remove screws securing the cover on the Unit, then remove the cover.
3. Tag level control switches electrical wires for identification, then disconnect the electrical wires from the switches.
4. Remove two screws securing the level control switches, then remove switches from the Unit.
5. Individually check each level control switch for proper operation.

Installation.

1. Install the new switch(s) by reversing the Removal procedure.
2. Make sure electrical wiring is correct (see applicable Figure 8, 9, or 10).

SAFETY THERMOSTAT

(see Figure 3 and 4)

IMPORTANT: If necessary to replace the safety thermostat, use only Replacement Safety Thermostat Kit (P/N 318040088) with special additional installation instructions included with the Kit.

Removal.

1. Disconnect electrical power from the Unit.
2. Remove screws securing the cover on the Unit, then remove the cover.
3. Loosen two screws securing the wiring compartment cover on pump motor, then remove the cover.
4. Disconnect safety thermostat electrical wire from the electrical wire inside the motor wiring compartment and terminal on level control switch.
5. Note position of the safety thermostat on the water pump outlet, then remove the thermostat.
6. Disconnect thermostat electrical wire from the motor wiring compartment and level switch, then remove thermostat from the Unit.

Installation.

1. Install the new safety thermostat by reversing Removal procedure.
2. Make sure electrical wiring is correct (see applicable Figure 8, 9, or 10)..

WATER PUMP

(see Figure 4)

Removal.

1. Disconnect electrical power from the Unit.
2. Close CO₂ cylinder shutoff valve, then close the shutoff valve in the plain water inlet line.
3. Remove screws securing the cover on the Unit, then remove the cover.
4. Pull up on the carbonated water tank relief valve to release CO₂ pressure from inside the tank.
5. Loosen screw on the pump-to-motor coupling enough to turn the pump for access to the liquid dual check valve assembly.
6. Disconnect the water inlet line from the water pump inlet. Be careful not to lose the black tapered gasket inside the swivel nut.
7. Disconnect the water tank inlet line from the liquid dual check valve assembly.
8. Remove the liquid dual check valve or vented dual-check valve assembly from elbow in the water pump outlet port.
9. Note position of the safety thermostat on the water pump outlet, then remove the thermostat.
10. Remove elbows from the water pump inlet and outlet ports.
11. Loosen screw on the water pump-to-motor coupling enough to remove the pump from the motor.

Installation.

1. Install the new water pump by reversing the Removal procedure and use the following instructions:
 - A. Make sure pipe thread sealing compound is used on the elbows threads before installing them in inlet ports of the new water pump.
 - B. Make sure drive tang on the water pump and slot in pump motor shaft are properly lubricated and aligned when installing the pump on the motor.
 - C. Make sure applicable tapered gasket is installed at each connection.
2. Open CO₂ cylinder valve, then open plain water inlet line shutoff valve.
3. Connect electrical power to the Unit.
4. Check the Unit for leaks during operation. Tighten any loose connections.
5. Install cover assembly on the Unit and secure with screws.

WATER PUMP MOTOR

(see Figure 4)

Removal.

1. Disconnect electrical power from the Unit.
2. Remove screws securing the cover on the Unit, then remove the cover.

3. Loosen screw on the water pump-to-motor coupling enough to remove the pump from the motor, then remove the pump.
4. Loosen the two motor access plate screws, then remove the access plate.
5. Tag the electrical wires for identification, then disconnect the wires from the terminals on the motor.
6. Remove the four screws securing the motor, then remove the motor from inside the Unit.

Installation.

1. Install the new water pump motor by reversing the Removal procedure.
2. Make sure tang on the water pump and the slot in the pump motor shaft are properly lubricated and aligned when installing pump on the motor.
3. Make sure all wiring is correct (see applicable Figure 8, 9, or 10)..

VENTED DUAL–CHECK VALVE ASSEMBLY

(see Figures 3, 6, and 7)

Removal.

1. Disconnect electrical power from the Unit.
2. Close CO₂ cylinder shutoff valve, and shutoff valve in the plain water inlet line.
3. Remove screws securing the cover on the Unit, then remove the cover.
4. Pull up on the carbonated water tank relief valve to release CO₂ pressure from inside the tank.
5. Remove water pump outlet line from the top (outlet) fitting on the vented dual-check valve.
6. Remove the vent line from the barbed fitting on the side of the vented dual-check valve.
7. Remove the vented dual-check valve from the water pump outlet port.

Installation.

1. Apply food-grade thread sealant to the pipe thread fitting on the inlet end of the vented dual–check valve, then install it in the water pump outlet port. Tighten the check valve so that the barbed vent fitting on it's side is in position as shown in Figure 7.
2. Connect the water pump outlet line to the top (outlet) fitting on the vented dual-check valve. Make sure a white tapered gasket is used to seal the connection.
3. Reconnect the vent line to the barbed fitting on the side of the vented dual–check valve.
4. Turn on plain water and CO₂ gas to the Unit.
5. Check for CO₂ and water leaks and repair if evident.
6. Connect electrical power to the Unit.
7. Lift up on the carbonated water tank relief valve to bleed trapped air from inside the tank.
8. Allow the Unit to cycle on and off several times while observing for correct operation.
9. Install cover on the Unit and secure with screws.

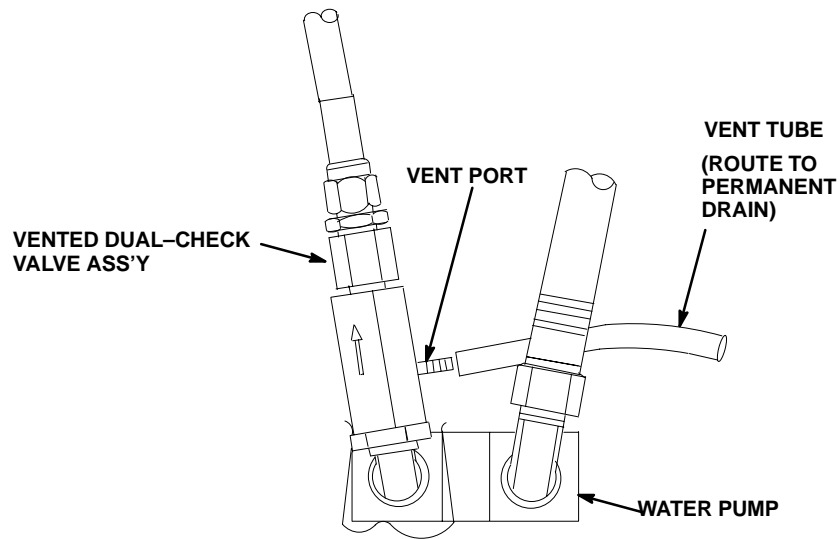


FIGURE 6. VENTED DUAL CHECK VALVE LOCATION

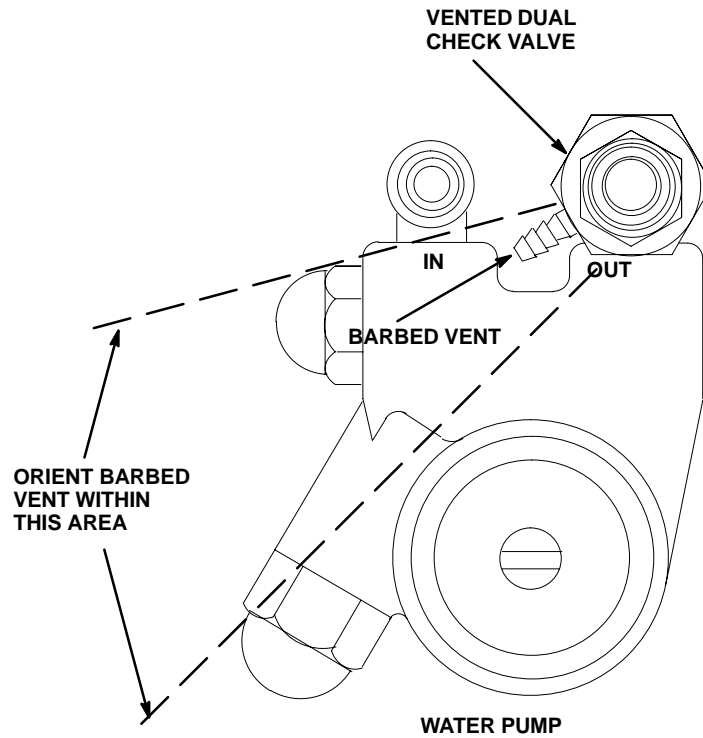


FIGURE 7. BARBED VENTED POSITION

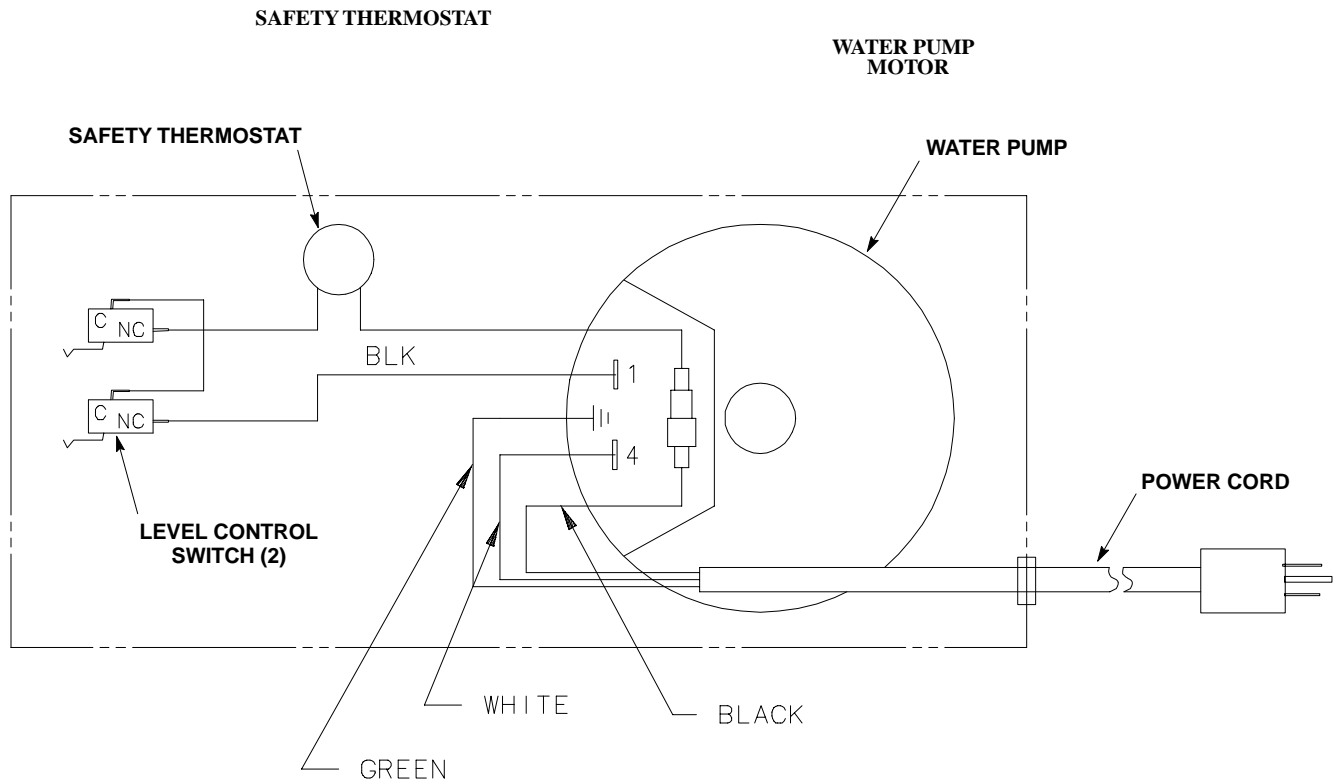


FIGURE 8. WIRING DIAGRAM (MODEL NO. 416411000 AND 1621)

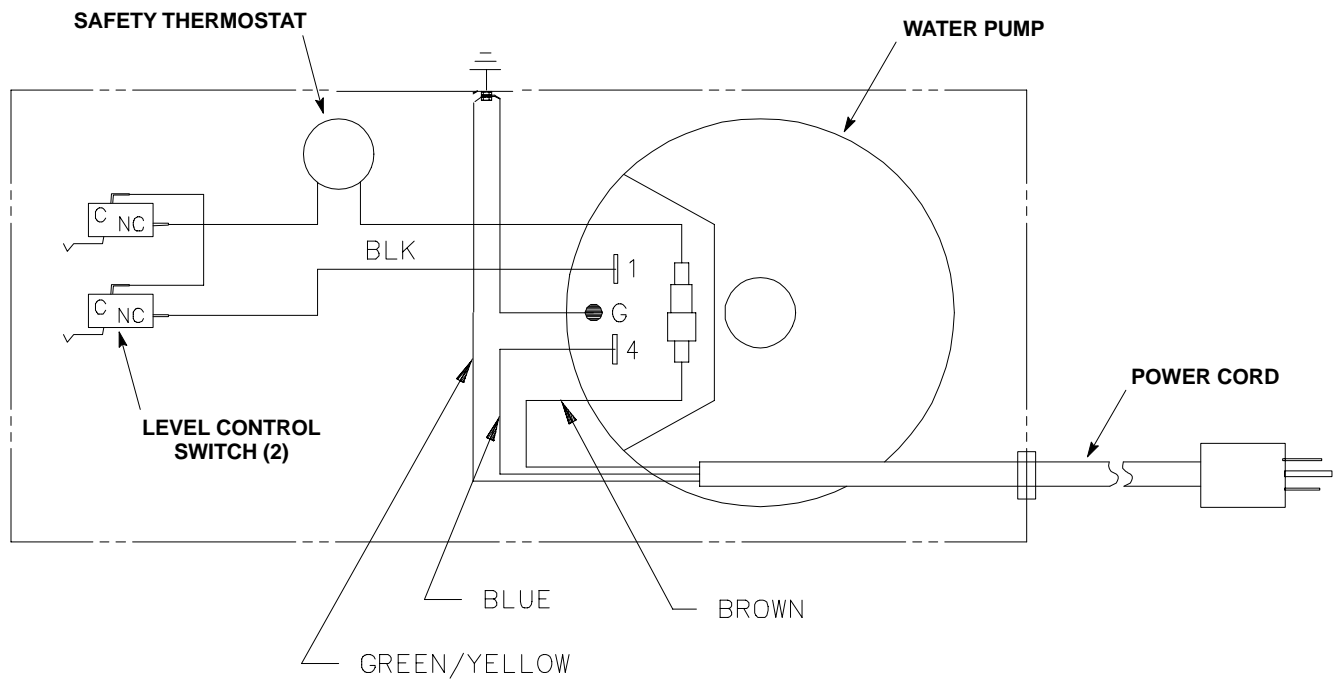


FIGURE 9. WIRING DIAGRAM (MODEL NO. 496411000)

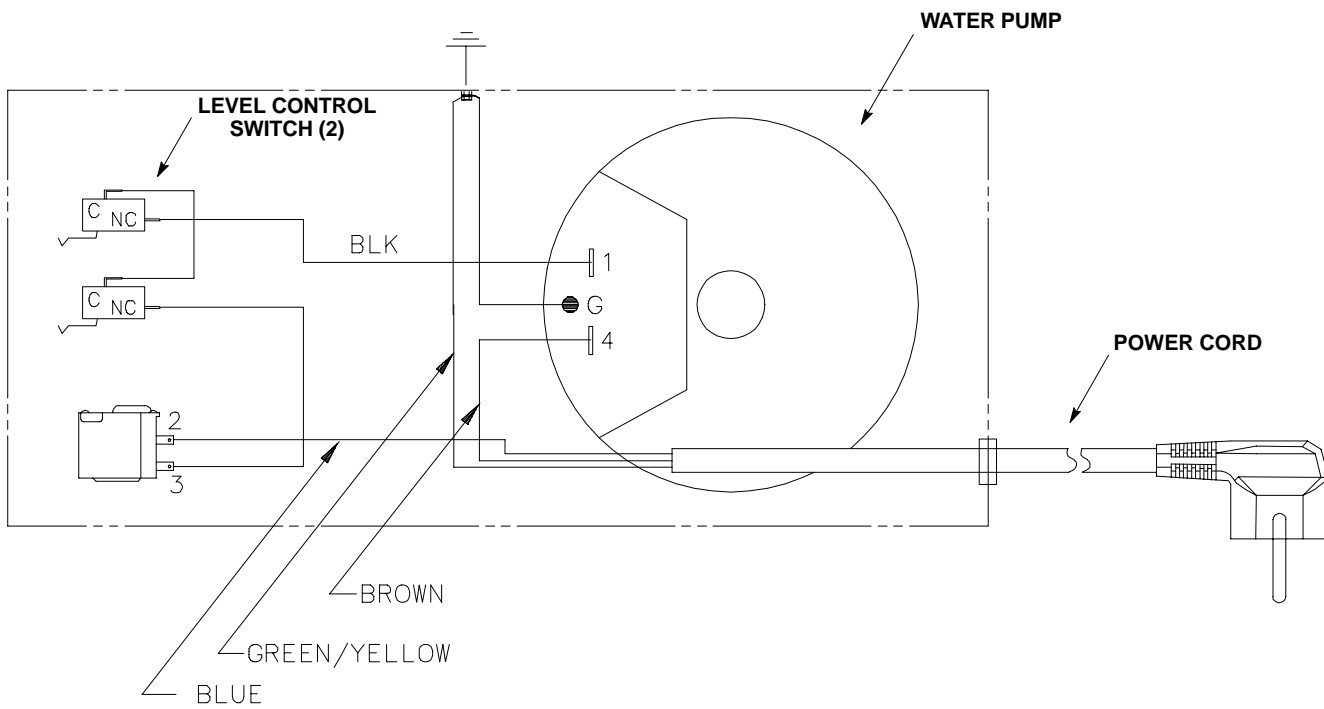


FIGURE 10. WIRING DIAGRAM (MODEL NO. 496411020)

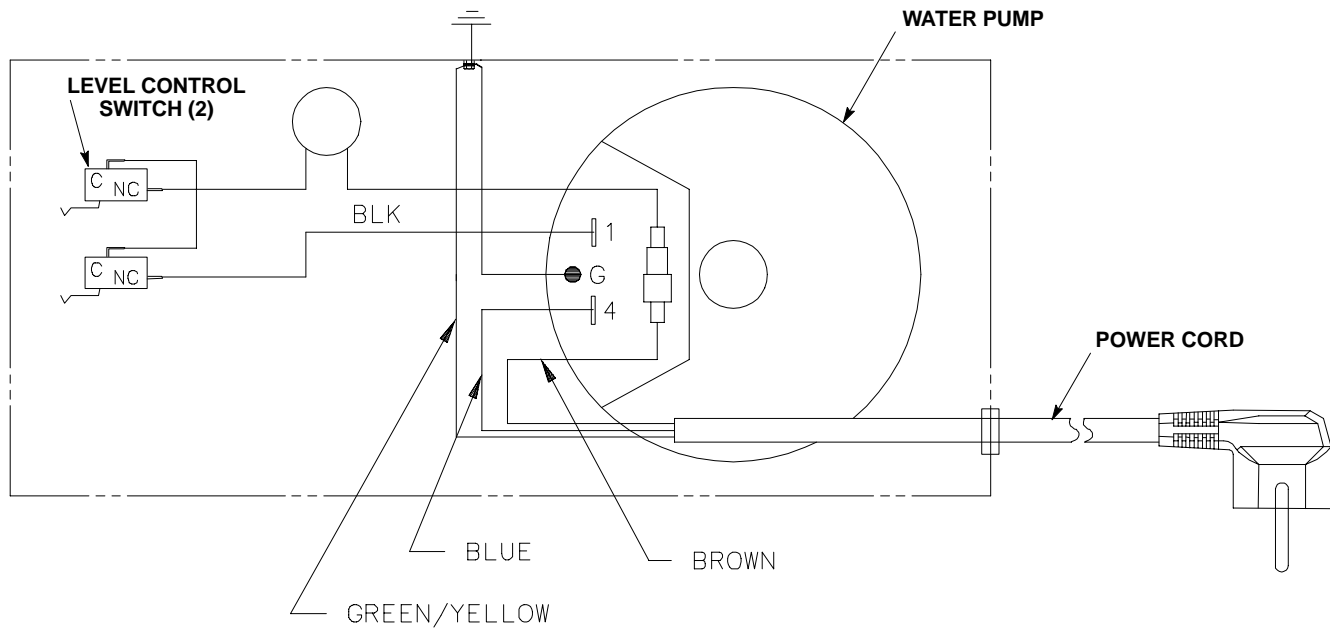


FIGURE 11. WIRING DIAGRAM (MODEL NO. 496411040)

TROUBLESHOOTING



WARNING: Disconnect electrical power to the carbonator to prevent personal injury before attempting any internal maintenance. Only qualified personnel should service the internal components or the electrical wiring.

If repairs to the carbonated water or the plain water systems must be made, disconnect electrical power to the Unit, then shut off CO₂ and plain water sources. Dispense from dispensing valve until carbonator tank CO₂ pressure has been relieved.

Trouble	Probable Cause	Remedy
WATER PUMP MOTOR WILL NOT OPERATE.	A. Power cord unplugged or circuit breaker open in panel box.	A. Plug in power cord or reset circuit breaker.
	B. Inoperative water pump motor.	B. Replace water pump motor as instructed.
	C. Dirty balance mechanism.	C. Clean balance mechanism.
	D. Loose connections and/or open electrical circuit.	D. Tighten connections and/or repair open circuit. Check line voltage.
	E. Overheated motor cut off by thermal overload protector.	E. Check for proper line voltage. Check for restricted pump discharge.
	F. Inoperative level control switches.	F. Replace level control switches as instructed.
	G. Binding or damaged balance mechanism.	G. Repair or replace balance mechanism.
	H. Water pump binding (new or replacement pumps only).	H. Remove water pump from motor, rotate pump or motor shaft 180 degrees, then recouple pump to motor.
	I. Water pump damaged.	I. Replace water pump as instructed.
	J. Safety thermostat inoperative.	J. Replace safety thermostat as instructed.
	K. Low water pressure or inoperative pressure switch (Model No. 496411020)	K. Restore water pressure or replace pressure switch.
WATER PUMP MOTOR WILL NOT SHUT OFF.	A. Foreign object restricting tank movement.	A. Remove foreign object.
	B. Dirty balance mechanism.	B. Clean balance mechanism.
	C. Leak in carbonated water line.	C. Tighten or replace line.
	D. Inoperative level control switches.	D. Replace level control switches as instructed.
	E. Binding or damaged balance mechanism.	E. Repair or replace balance mechanism.

Trouble	Probable Cause	Remedy
ERRATIC CYCLING OF CARBONATOR.	A. Balance mechanism spring obstructed or "cocked".	A. Remove obstruction. Make sure spring is perpendicular to spring release and is not twisted.
	B. Dirty balance mechanism.	B. Clean balance mechanism.
WATER PUMP MOTOR OPERATES BUT WATER PUMP DOES NOT PUMP WATER.	A. Water pump inlet water strainer screen dirty.	A. Clean or replace water strainer screen as instructed.
	B. Kinked water supply line.	B. Straighten water supply line.
	C. Restriction between water pump outlet and carbonator tank inlet.	C. Remove restriction.
	D. Foreign object in water pump bypass.	D. Clean. (Note: Count number of turns bypass screw makes when removing and install same number of turns.)
	E. Water pump worn out.	E. Replace water pump as instructed.
WATER PUMP CAPACITY TOO LOW.	A. Water pump inlet water strainer screen dirty.	A. Clean or replace water strainer screen as instructed.
	B. Water supply capacity too low.	B. Inlet water supply must be at a minimum of 100-gallons per hour with a maximum water pressure of 70-psi.
	C. Water filter clogged.	C. Replace water filter.
	D. Inoperative water pump.	D. Replace water pump as instructed.

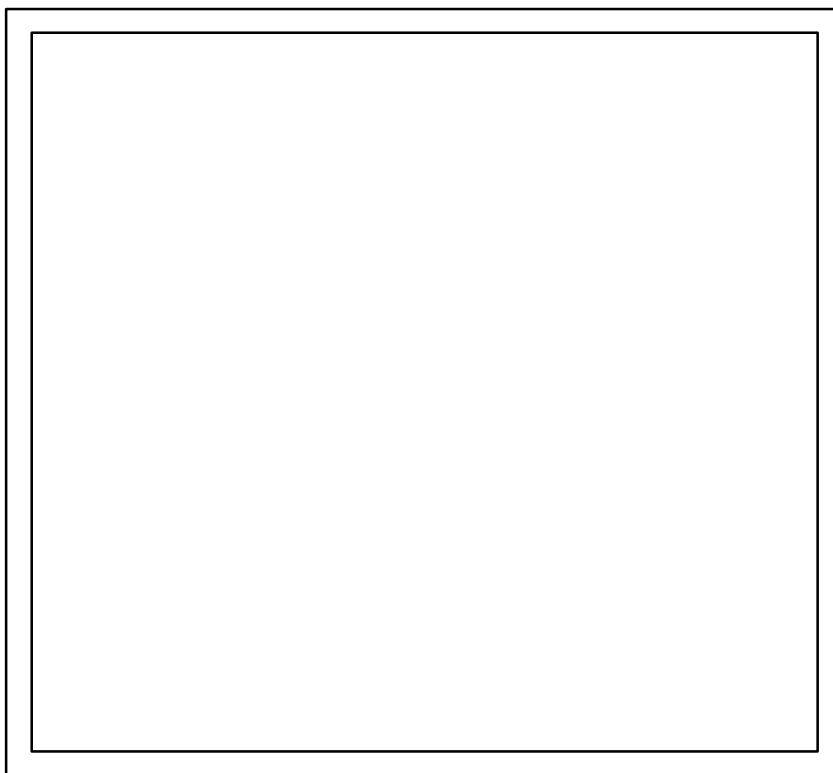
WARRANTY

IMI Cornelius Inc. warrants that all equipment and parts are free from defects in material and workmanship under normal use and service. For a copy of the warranty applicable to your Cornelius, Remcor or Wilshire product, in your country, please write, fax or telephone the IMI Cornelius office nearest you. Please provide the equipment model number, serial number and the date of purchase.

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